REPORT TO THE LEGISLATURE ON CAPITAL SUPPORT PERFORMANCE MEASURES

November 30, 1995

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A. Background

In February 1994 SRI International issued its final report *Evaluation of the Organizational Structure and Management Practices of the California Department of Transportation*. It recommended that the Department embark on an effort to develop appropriate performance measures that could be used for regularly tracking achieved performance against targets. We embraced the recommendation and began the process of developing an effective performance measurement system during calendar year 1995. However, we determined early on that developing measures for the sake of measurements was not adequate. We needed to focus on using performance measurement tools to measure results of high level priorities identified in our strategic plan and of significance to external parties.

Our plan is to have a three-tiered system of measures consisting of:

1. A limited number of **corporate measures** that focus on the overall health of transportation in California.
2. **Program measures** that focus on the health of each of the Department's programs. The measures identified in this report for capital support are at this second level.
3. **Operational measures** at the point where delivery of a product or service occurs.

While we have made significant progress on a measurement system and have developed a number of good program and operational measures, we are not yet done. We continue to refine the measurement process as well as the measures themselves. We intend to complete this effort by the end of the 1995-96 Fiscal Year. SRI recognized the challenge in developing appropriate measures when it said "we anticipate that in the first couple of years, the set of measures will change somewhat as individual measures and ratios are found to not provide the expected incentives or information." They described this as a "trial-and-error stage." We concur with these statements and expect to make adjustments as necessary to develop good measures that can be used to determine the effectiveness and efficiency of our operations.

Our plan to roll out performance measures also entails linkage of performance measures with other key initiatives and products in the organization such as strategic planning, budget development and legislative proposals. We will also focus on the development of reporting systems that will help us communicate results both internally and externally.

LEGISLATIVE REQUIREMENT

This report responds to item 2660-001-042 of the supplemental report language to the 1995 Budget Act, which reads:

Caltrans shall, by December 1, 1995, provide a report to the Legislature that proposes and evaluates performance measures for all major capital outlay

support functions, including project studies, project development, right-of-way acquisition, and construction oversight. The department shall propose measures that (1) provide an accurate measure of annual efficiency, as well as (2) provide a consistent basis for year-to-year comparisons, and (3) evaluate both the department's cost and its timeliness in completing work. Furthermore, the department shall demonstrate that each measure that it proposes can be accurately generated from the department's existing or planned information systems.

SUMMARY OF PROPOSED MEASURES

Although Capital Support has many parts, the most significant of these is Major State Program Projects. Most Capital Support effort is expended on these projects. The program measures therefore focus on them because they are the area in which performance measures offer the greatest potential benefit.

We propose twelve program performance measures for Capital Support. The breakdown for these measures are as follow:

	Capital Support in Context	Major Projects		
		Project Development	Construction	
Quality			1	**1**
Time Growth		2	1	**3**
Capital Cost Growth		1	2	**3**
Capital Delivery		1		**1**
Support Cost	2	1	1	**4**
	2	**5**	**5**	**12**

The following section provides detailed descriptions of the measures.

B. Proposed Program Performance Measures for Capital Support

1. CAPITAL SUPPORT IN CONTEXT

a. "Pie" Charts showing program context

i. PY and dollar expenditures for:

- the Department's four programs
- the elements of the Highways program
- The parts of Capital Support

These would be expressed as percentages using 'pie' charts.

System Needs: Data is available from the Transportation Accounting and Management System (TRAMS).

b. Capital Support as a percentage of Capital Outlay

ii. Total Capital Support[1] expenditures in a particular year as a percentage of the total Capital Outlay[2] expenditures in that year. Both Capital Support and Capital Outlay would exclude expenditures on Locally Funded State Highway Projects[3]. Capital Support would also exclude Owner-Operator expenditures[4].

This gives an approximate relationship between support costs and capital costs. This relationship should not be considered alone. Most capital projects take several years to develop. As a result, most current capital support effort is committed to projects for which there has not yet been any capital outlay.

System Needs: Data is available from TRAMS.

2. MAJOR PROJECTS

Quality of Final Product

Time and cost are easily measured numerical factors, but quality is difficult to measure. This is because all measures of quality have a degree of subjectivity. Nevertheless, we must attempt to measure quality. If the measures emphasize only time and cost, then quality may suffer. Without a measure of quality, the

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[1] Program element 20.10.

[2] Program element 20.20.

[3] Program components 20.10.400 and 20.20.400.

[4] Category of Expenditure 033000.

combined measures will not engender positive behavior. To this end, the the Department proposes to rate the final product at acceptance.

iii. This rating will require contributions from all parties that have an interest in the final product. These include the Regional Planning Agency, the Program Manager that initiated the project, the Maintenance Program Manager and the Operations Program Manager. The evaluation will include a comparison between the product and the statement of deficiencies given in the original scoping document. It will also evaluate the time and cost growth from the scoping document to completion, the maintainability of the product and the operational effectiveness of the product.

System Needs: The rating system necessary for this performance measure will require extensive development. The measure is valuable and necessary in order to establish if the project development process is focused throughout on satisfying the originally identified need.

Time Growth

a. During Project Development

iv. Number of projects that were programmed for the current fiscal year that were, in fact, ready to list in this year or earlier.[5] [6] Expressed as a percentage of the total number of projects programmed for the year.

This measures the Department's success in completing the design of programmed projects within or ahead of schedule.

System Needs: This data is available. It is included in the Department's annual report to the California Transportation Commission.

v. Programmed dollar value of projects that were programmed for the current fiscal year that were, in fact, ready to list in this year or earlier. Expressed as a percentage of the total dollar value of projects programmed for the year.

This measures the Department's success in completing the design of programmed projects within or ahead of schedule. It is similar to the previous measure except that it uses the dollar value of projects rather than their number. Both factors are important. Higher value projects generally provide a greater benefit to the public. It is therefore appropriate to measure the dollar volume. There are exceptions, however.

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[5] Programmed projects are projects listed in the STIP, SHOPP or TSM programming documents.

[6] "Ready to list" is the date when project plans and specifications are complete, permits are in hand and the project is ready to advertise in every respect except that funds might not be available. In the event that funds are available, the project is advertised. If funds are not available, the project remains in a "Ready to List" state until funds become available. "Ready to list" signifies that the designers have fulfilled their obligations.

Some low cost projects provide benefits that are far greater than their cost might imply. Every State Highway improvement provides some benefit and has a public constituency. It is therefore also appropriate to count the number of projects.

System Needs: This data is available. It is included in the Department's annual report to the California Transportation Commission.

b. During Construction

vi. Actual time[7] for contract completion, excluding weather days. Expressed as a percentage of the original allotted days at time of Award.

System needs: There is information on contract time currently collected in the PISA system, however, there is a need to review and revise the time charging practices and definitions, so that accurate information may be used for reporting performance measures.

Capital Cost Growth

a. During Project Development

vii. Total award cost of programmed projects that were awarded in a particular year. Expressed as a percentage of the amount programmed for those projects.

This measures the Department's success in delivering projects within their programmed amount.

System Needs: Requires a system that will:

- track project splits and combines.
- re-assign programmed construction capital to the descendant projects after splits and combines.

b. During Construction

viii. Proposed Final Estimate (PFE)[8] for projects completed in a particular year. Expressed as a percentage of the Award allotment value of those projects.

The PFE is a reasonable value of the cost of the contract as built (not including any claims). The Award allotment value includes the value of the contract items as bid by the contractor, supplemental work, contingencies, and State Furnished Materials.

This measures whether the project is constructed within budget.

System needs: All the information is available in the PISA system.

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[7] actual time = allotted days + Contract Change Order days + weather days + other days + overrun days. Neither the contractor nor Caltrans is responsible for weather days.

[8] The Proposed Final Estimate (PFE) is a notice to the contractor of the amount that Caltrans intends to pay to finalize the construction contract. Contractors may submit exceptions to the PFE within 30 calendar days of receipt. These exceptions establish formal claims.

ix. Final Estimate for projects finalized in a particular year. Expressed as a percentage of the Proposed Final Estimate of those projects.

The difference between the value of the PFE and the final estimate is usually the cost of claims. Because claims are often complicated and the resolution time is often lengthy, this portion of the contract administration has been separated from the contract work period.

System needs: All the information is available in the PISA system.

Capital Delivery

x. Dollar value of state program construction and right of way capital encumbered in the current fiscal year. Expressed as a percentage of the funds available.

This measures the Department's success in delivering capital improvements equal in value to the expected funds.

System Needs: Data is available from TRAMS.

Support Cost

a. Project Development and Right-of-Way (Phases 0, 1 & 2)

xi. Total support cost for programmed projects awarded in the fiscal year. Counted from July 1, 1996 to date of award. Expressed as a percentage of the total project development support dollar estimates for these projects listed in the programming documents. These estimates include work under Phases 0, 1 and 2.

The total of all the project support budgets is less than what PYPSCAN would have calculated. Some individual projects may, however, have project support budgets greater than their PYPSCAN estimates. This recognizes that PYPSCAN is a statistical tool and that any statistical sample will have some events above the average.

By completing work within the support budgets, the Department will ensure that future PYPSCAN staffing formulas will reflect lower support costs than past formulas. This is in keeping with the goal of continuous improvement.

System Needs: Requires a system that will

- track project splits and combines.
- re-assign project support budgets to the descendant projects after splits and combines.
- re-assign accumulated support costs to the descendant projects.

b. Construction (Phase 3)

xii. Total construction support cost for programmed projects with Proposed Final Estimate (PFE) in the fiscal year, counted from contract award to PFE, and expressed as a percentage of the total construction support estimates for these projects listed in the programming documents.

System Needs: Identical to 'Project Development and Right-of-Way (Phases 0, 1 & 2)'